

PATENT APPLN. NO. 10/578,095
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

REMARKS

In the Final Action the Office has rejected the claims of the present application, claims 1-7, under 35 U.S.C. § 103(a) as being unpatentable over EP 1260278 A2 (identified by the Office as Yoichi et al.) (herein: "Yoichi") in view of Poole et al., US 4949003 ("Poole"). This is the same rejection that was made in the first Office Action dated March 19, 2009.

In the response filed August 19, 2009, to the first Office Action, claim 1 was amended to include the limitation that the ultraviolet-curing resin composition of the present invention, which comprises (a) 5 to 35 parts by mass of a chlorinated polyolefin with a chlorine content of 15 to 40 mass %; (b) 15 to 60 parts by mass of an alicyclic hydrocarbon mono(meth)acrylate; (c) 5 to 80 parts by mass of a polypropylene glycol di(meth)acrylate; (d) per 100 parts by mass of the total amount of components (a), (b) and (c), 0 to 1100 parts by mass of an aliphatic hydrocarbon di(meth)acrylate; (e) per 100 parts by mass of the total amount of components (a), (b) and (c), 0 to 600 parts by mass of a polyfunctional monomer having 3 to 6 (meth)acryloyl groups in its molecule; and (f) per 100 parts by mass of the total amount of components (b), (c), (d) and (e), 1 to 15 parts by mass of a photoinitiator; further contains 1 to 10 parts by mass of an epoxy

PATENT APPLN. NO. 10/578,095
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**PATENT
FINAL**

compound per 100 parts by mass of the chlorinated polyolefin (a).

Applicants explained in the response that the epoxy compound traps hydrochloric acid that is generated from the chlorinated polyolefin (a) by dehydrochlorination. In particular, when 1 to 10 parts by mass of an epoxy compound is(are) added to 100 parts by mass of chlorinated polyolefin (a), hydrochloric acid can be efficiently trapped without reducing the adhesion of the composition to a polyolefin substrate, and discoloration of the cured coating film and other drawbacks can be prevented.

In contrast, when an epoxy compound stabilizer is not used, notable coloration (brown-black) is observed in the resulting cured coating film caused by ultraviolet irradiation. For example, when a chlorinated polyolefin is produced in the same manner as in Production Example 1 of the present specification, but without the use of a stabilizer, and a supplementary examination of Example 1 in the present specification is conducted using the above-obtained chlorinated polyolefin, the resulting cured coating film will suffer from pronounced coloration (brown-black) caused by ultraviolet irradiation. Adhesion to the polyolefin substrate can be accomplished without adding a stabilizer. However, the appearance of pronounced coloration on a cured coating film can adversely affect its commercial value and the practicability of the

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RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL

use of the cured coating film for paints, inks, adhesives, sealing agents and primers.

Applicants noted that neither Yoichi nor Poole discloses or suggests adding an epoxy compound to the ultraviolet-curing resin compositions disclosed therein and neither discloses or suggests the advantageous properties of an ultraviolet-curing resin composition as recited in the claims of the present application which contains 1 to 10 parts by mass of an epoxy compound per 100 parts by mass of the chlorinated polyolefin (a).

In the 35 U.S.C. § 103(a) in the Final Action the Office has taken the position regarding the requirement that the ultraviolet-curing resin composition of the present invention recited in claim 1 contain 1 to 10 parts by mass of an epoxy compound per 100 parts by mass of the chlorinated polyolefin (a): "Yoichi et al. (page 10, Table 1) clearly disclose examples comprising 4 parts of an epoxy compound." (Final Action, page 4, last three lines).

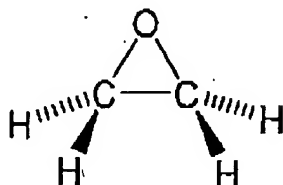
This assertion is not correct. The compound which is contained in an amount of 4 parts in Table 1 of Yoichi is benzophenone, which is not an epoxy compound.

An epoxy compound contains at least one epoxy group, which is a cyclic ether having an oxygen atom that binds to two carbon atoms in the same molecule. The epoxy compound forms a three-membered

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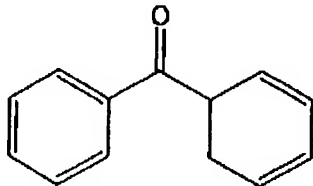
PATENT
FINAL

ring from O, C, and C. The structure of an epoxy group is shown below.



[Epoxy group]

Benzophenone, on the other hand, is a compound represented by the formula below, which is obviously different from an epoxy compound. Benzophenone does not have a three-membered ring consisting of O, C and C.

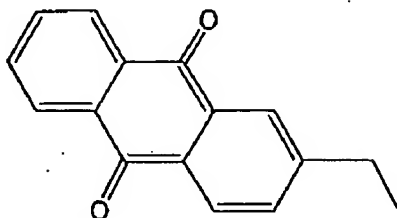


[Benzophenone]

As is also clear from the formula shown below, 2-ethylantraquinone, which is used as a photoinitiator other than benzophenone described above in Table 1 of Yoichi, is also not an epoxy compound.

PATENT APPLN. NO. 10/578,095
RESPONSE UNDER 37 C.F.R. § 1.116

PATENT
FINAL



[2-Ethylanthraquinone]

In summary, the compounds identified by the Office are not epoxy compounds and none of the photoinitiators exemplified on page 7, paragraph [0050], of Yoichi are epoxy compounds.

Therefore, Yoichi nowhere discloses or suggests an ultraviolet-curing resin composition containing 1 to 10 parts by mass of an epoxy compound (stabilizer) per 100 parts by mass of a chlorinated polyolefin (a), and nowhere discloses or suggests the remarkable effects attained thereby. Accordingly, the combination of Yoichi and Poole fails to support a case of prima facie obviousness of the ultraviolet-curing resin composition defined in claims 1-7 of the present application and removal of the 35 U.S.C. § 103(a) rejection is in order.

The foregoing is believed to be a complete and proper response to the Office Action dated November 2, 2009.

In the event that this paper is not considered to be timely

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PATENT
FINAL

filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,
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